DOCUMENT RESUME

ED 181 364 CG 014 087

AUTHOR Farrow, Dana L.: And Others
TITLE A Regression Approach to Identifying Ways to Increase Leadership Effectiveness.
PUB DATE Sep 79
NOTE 14p.: Paper presented at the Annual Convention of the American Psychological Association (87th, New York, NY, September 1-5, 1979)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Administrative Personnel: Behavior Patterns: *Employer Employee Relationship: Environmental Influences: *Job Satisfaction: *Leadership Styles: Multiple Regression Analysis: Organizational Development: *Performance Factors: Research Projects: *Supervisors: *Task Performance

ABSTRACT

The possibilities of providing, for a manager, an individualized prescription of what he can do to increase the performance of his work unit on designated criteria in selected organizational settings are demonstrated. The information is couched in terms of a 31-variable system described by the manager and his immediate subordinates. Regression analyses combine each of five leadership styles and situational elements to isolate the variables of consequence. Results reflect a validation sample of 90 managers and their 366 subordinates and a cross validation sample of 78 managers and their 312 subordinates for a variety of profit organizations for three criteria: workgroup effectiveness, satisfaction with supervision, and job satisfaction. (Author)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED181364

A Regression Approach To Identifying Ways To Increase Leadership Effectiveness

Dana L. Farrow
Florida International University

Enzo R. Valenzi
Florida International University

Bernard M. Bass
State University of New York at Binghamton

Paper presented at the American Psychological Association Annual Convention, September, 1979, New York, N.Y.

CG 014087

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Dana L. Farrow

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

A Regression Approach to Identifying Ways to Increase Leadership Effectiveness

Dana L. Farrow
Florida International University

Enzo R. Valenzi
Florida International University

Bernard M. Bass
State University of New York at Binghamton

Several approaches are currently available for assisting the manager in determining what leader style would be most likely to be effective in a given situation. Vroom's (1974) seven node decision tree suggests five alternative responses based on logical expectations about the requirements for the successful completion of a single decision. Fiedler's (1967) three-variable contingency of (1) personal orientation; (2) esteem of the leader; and (3) the structuredness of the situation, suggests the utility to the leader of his being directive or participative. In this report, we will present what variables in a system of situational variables -- in which a leader and his subordinates are embedded -- are most significant in determining what discriminates the effective and satisfying leader from the ineffective and dissatisfying leader.

The regression functions obtained here can be used to generate recommendations to individual managers concerning what systems variables they might consider modifying in order to increase the likelihood of improving their work group's effectiveness, satisfaction with supervisor, and job satisfaction.

METHOD

Subjects

A total of 250 managers and their 925 subordinates formed the initial sample for this study. The requirement that there be no data missing for any of the 27 variables being considered (19 situational plus 5 leader style

plus 3 criterion variables) resulted in the actual sample for this study containing 168 managers and their 678 subordinates. All subjects worked in profit-making organizations. Mean values and standard deviations respectively for biodata were: manager age (36.1 years, 5.3 years), subordinate age (33.2 years, 5.9 years), manager education (16.8 years, 1.7 years), subordinate education (16.2 years, 1.7 years), manager tenure (8.1 years, 4.2 years), subordinate tenure (6.6 years, 4.2 years), manager annual salary ($35,500, $12,600), subordinate annual salary ($23,900, $9,000).

The sample was further divided into a validation group of 90 managers and their 362 subordinates, and a cross-validation group of 78 managers and their 316 subordinates. Examination of the biodata revealed no significant differences at $p \leq .10$ between (1) the sample (validation plus cross-validation) used in this study and (2) the remainder of the cases excluded from analysis because of data missing for some of the variables. Similar comparisons between (1) the validation sample and (2) the cross-validation sample revealed no significant mean differences ($p \leq .10$); however, the standard deviation of manager age in the validation sample was larger than in the cross-validation sample (1.9 vs. 1.2, $p \leq .001$), and the standard deviation of manager tenure was larger in the cross-validation sample than in the validation sample. (4.9 vs. 3.8, $p \leq .05$).

Instrument

Data were collected with a survey instrument, Profile, that was completed by each manager and subordinate work group. Subordinate questionnaires were returned anonymously but they could be identified by work group so that manager and subordinate questionnaires could be matched.

Profile measures 16 biographical items plus 31 variables grouped

into 6 sets: organizational, task, within system relations, leader styles, effectiveness and satisfaction, and personality (not used in the present study). Table 1 shows variable definitions and reliabilities. The development and validity of Profile are detailed in Bass, Valenzi, Farrow & Solomon, 1975, where Profile scales were shown to have convergent validity and the work effectiveness scale was shown to have validity against an external criterion of effectiveness.

Analyses

The relatively large number of independent variables led to using a stepwise method for the selection of variables based on their explanatory power. Accordingly, a stepwise regression analysis was performed using 19 variables, as seen by the manager himself, dealing with organization, task, and interpersonal processes. Also included was one leadership style, such as consultation, measured by taking the mean of the ratings by the subordinates of the manager. Managers' perceptions of the situation were used because it is their perceptions which are generating their leadership behaviors. Mean subordinate ratings of the leader styles were used because they should be more accurate than the managers' self reports and removes this self-report bias.

Mean subordinate ratings of the criterion variables satisfaction with supervision and job satisfaction were used because we were in fact interested in subordinate satisfaction. Mean subordinate ratings of work group effectiveness were used, rather than manager ratings, based on results obtained by Solomon (1975). In a study using similar data Solomon reported that subordinates' mean work group effectiveness ratings were correlated with customers' ratings of the effectiveness of those work groups ($r=.65$, $p \leq .01$), whereas

managers' ratings of effectiveness were not related to customers' ratings.

The five leader styles (direction, negotiation, consultation, participation, delegation)are empirically correlated, but they are conceptually independent (Bass, Valenzi, Farrow, & Solomon, 1975), and prior research has demonstrated that most managers use most leader styles, (Heller, 1971; Hill, 1973; Vroom & Yetton, 1973). Therefore, we included only one leadership style in each regression equation because we wanted to see when each style might contribute most to effectiveness and satisfaction; i.e., we wanted each leader style to be eligible for entry into an equation, which could not happen if we put them all in the same equation due to multicollinearity. One equation for each leader style also answers another question. Given the possibility of a manager adapting any one leader style in a given situation, what (other) variables are important to effectiveness and satisfaction? Similarly, since we wanted to focus on variables whose values might be changed by the manager to increase effectiveness or satisfaction, we excluded personality variables from the analyses.

The stepwise regression procedure allowed potential independent variables to enter each equation until the dependent variance explained by the next independent variable was not significant at the p=.05 level. Although stepwise regression was utilized, the procedure resulted in a simultaneous regression equation at each step. The combination of three criterion variables and five leader styles resulted in 15 regression analyses. After each regression equation was obtained, it was cross-validated on a sample of 78 managers and their 316 subordinates.

Abstract

This report is an effort to demonstrate the possibilities of providing individualized prescriptions for managers as to what they can do to increase the performance of their work units on designated criteria in selected organizational settings were investigated. The information was couched in terms of a 31-variable system described by managers and their immediate subordinates. Regression analyses combined each of five leadership styles and situational elements to isolate the variables of consequence.

Significant Results for a validation sample of 90 managers and their 366 subordinates and a cross validation sample of 78 managers and their 312 subordinates from a variety of profit organizations were obtained on Variables of workgroup effectiveness, satisfaction with supervision, and job satisfaction.

(Author)

RESULTS

Work group effectiveness

Table 2 shows the independent variables and their standardized regression coefficients in each equation. All equations yielded significant cross-validated R's.

Harmony was the first variable to enter each equation and of the five leader styles only delegation failed to enter when given the chance. Clear objectives entered every equation except the one for consultation. All beta weights were positive except for negotiation.

Satisfaction with supervision

Table 3 shows results for satisfaction with supervision. Clear objectives were associated with direction and negotiation, commitment to group with consultation, and harmony with participation and delegation. Again all cross-validated R's were significant.

Job satisfaction

The criterion of job satisfaction had the most complex pattern of variables associated with leader styles. Most interesting was that subordinate commitment to group had a negative beta weight when delegation or direction was in the regression equation. Also, clear objectives, as seen by the manager emerged in all equations and had the highest beta weight except for consultation.

CONCLUSIONS

Work group effectiveness and leadership. For every leader style, the same work group variable, harmony, was important. Also important with direction, negotiation, and participation was a task variable, clear objectives. The weight

of each situational variable, when it appeared, was also rather consistent from one leader style to another.

Subordinate satisfaction with supervision and leadership. The regression equations suggest that for the criterion of satisfaction with supervision, leader style is the most important variable--only for negotiation did a situational variable precede a leader style in order of entry in an equation, and negotiation was the only leader style that did not have the highest regression weight in its equation.

Subordinate job satisfaction and leadership. More situational variables appeared with direction and delegation explaining job satisfaction than when explaining the other two criteria. This gives support to the idea that one must consider what criterion he wishes to maximize by deciding what changes in leader style or situational variables are required. It is also interesting to note that more situational variables had a bearing on job satisfaction for the two leader styles which are the least time consuming from the manager's standpoint (Heller, 1971).

Fortunately, it appears that just changing his leadership style may yield major improvements. A leadership variable appeared in 13 of the 15 regression equations. In general, in the absence of situational considerations, managers are more likely to score higher on the three criteria of subjectively-evaluated work group effectiveness, satisfaction with supervision, and subordinate job satisfaction if they negotiate less and direct, consult, participate, and delegate more.

REFERENCES

Bass, B.M., Valenzi, E.R., Farrow, D.L. & Solomon, R.J. Management styles associated with organization, task, personal, and interpersonal contingencies. Journal of Applied Psychology, 1975, 60, 720-729.

Fiedler, F.E. A theory of leadership effectiveness. New York: McGraw-Hill, 1967.

Heller, F.A. Managerial decision making. Netherlands: Royal Van-Gorum Ltd., 1971.

Hill, W.A. Leadership style: Rigid or flexible? Organizational Behavior and Human Performance, 1973, 9, 35-47.

Solomon, R.J. The importance of manager-subordinate perceptual differences to the study of leadership. Unpublished doctoral dissertation, Department of Psychology, University of Rochester, 1975.

Vroom, V.H. A new look at managerial decision making. Organizational Dynamics, 1974, 5, 66-80.

Vroom, V.H. & Yetton, P.W. Leadership and decision making. Pittsburgh: University of Pittsburgh Press, 1973.

Table 1

The 27 Profile Variables With Scale Reliabilities and Number of Items Per Scale
(N= 244 to 1236)

Organization

Constraints--Extent organizational arrangements must be followed (.51[a], 6[b])
Clarity--Extent organizational arrangements have been clearly explained (.58,5)
TRUST--Extent there is warmth and trust between managers and others (.65,4)
Order--Extent activities are planned and organized (.53,2)
External Influences--Extent activities are influenced by legal, economic, social and political factors (.73,4)

Task

Clear Objectives--Extent one knows when he is doing a good job (.53,3)
Routine--Extent one's work is routine (.63,3)
Discretionary Opportunities--Extent there are choices in how one's job is done (.77,2)

Within System Relations

Boss Power--Extent the boss can veto subordinates' decisions, reverse priorities and set salary increases (.75,3)
Subordinate Power--Extent the subordinate can reverse boss, appeal to higher authority (.82,3)
Boss Information--Extent boss has information to make effective decisions affecting subordinates (.51,3)
Subordinate Information--Extent subordinates have all necessary information to make effective decisions (.62,3)
Long Term Objectives--Extent boss has long rather than short range objectives (.50,5)
Structure--Extent boss-subordinates relations are tightly fixed or loosely arranged (.78,2)
Intragroup Harmony--Extent members do not fight, complain, and disagree (.68,3)
Interdependence--Extent members must depend on each other and collaborate (.61,3)
Commitment to Group--Extent members support the group's efforts to succeed (.62,5)

Leader Styles

Directive--Extent you attain desired ends by telling your subordinates what to do and how to do it (.71,8)
Negotiative--Extent you employ political means and bargaining to gain desired ends (.74,10)
Consultative--Extent you discuss matters with your subordinates before you yourself decide what to do to achieve your end (.88,8)
Participative--Extent you share a consensual decision making process with your subordinates to achieve mutually agreed upon ends (.83,6)
Delegative--Extent you attain desired ends by leaving your subordinates free to make their own decisions (.63,4)

Outputs

Work Unit Effectiveness--Extent your work unit is as good as possible (.65,3)
Satisfaction with Supervision--Extent subordinates believe superior is doing as good a job as possible (.84,4)

Satisfaction with job--Extent subordinates are satisfied with their job, use of their abilites, and promotional opportunities(.84,4)

[a]Coefficient alpha

[b]Number of items in scale

Table 2

Summary of Leadership and Situational Factors Affecting Work Group Effectiveness

Leader Style	Variables	Regression Beta Coefficients	F	df	R	R^b	N^c
Direction[a]	HARMONY	.27	12.2**	3&86	.55	.43**	76
	Direction	.21					
	CLEAR OBJECTIVES	.24					
Negotiation	HARMONY	.20	12.5**	3&86	.55	.25**	76
	CLEAR OBJECTIVES	.28					
	Negotiation	-.24					
Consultation	HARMONY	.34	19.4**	2&87	.56	.49**	78
	Consultation	.34					
Participation	HARMONY	.32	13.7**	3¢86	.57	.42**	76
	Participation	.26					
	CLEAR OBJECTIVES	.24					
Delegation	HARMONY	.30	15.0**	2&87	.51	.29**	76
	CLEAR OBJECTIVES	.28					

a Capitalized variables represent manager perceptions; lower case variables represent subordinate perceptions

b Cross-validation R

c Number of work groups in cross-validation sample.

* $p<.05$

** $p<.01$

Table 3

Summary of Leadership and Situational Factors Affecting Satisfaction With Supervision

Leader Style	Variables	Regression Beta Coefficients	F	df	R	R^b	N^c
Direction[a]	Direction	.39	14.6**	2&87	.50	.46**	77
	CLEAR OBJECTIVES	.24					
Negotiation	CLEAR OBJECTIVES	.27	8.4**	2&87	.40	.21*	77
	Negotiation	-.24					
Consultation	Consultation	.51	18.9**	2&87	.55	.46**	77
	COMMITMENT TO GROUP	.19					
Participation	Participation	.44	16.7**	2&87	.53	.51**	78
	HARMONY	.30					
Delegation	Delegation	.44	17.2**	2&87	.53	.54**	78
	HARMONY	.27					

a
Capitalized variables represent manager perceptions; lower case variables represent subordinate perceptions.

b
Cross-validation R.

c
Number of work groups in cross-validation sample.

*
P<.05

**
P<.01

Table 4

Summary of Leadership and Situational Factors
Affecting Job Satisfaction

Leader Style	Variables	Regression Beta Coefficients	F	df	R	R^b	N^c
Direction[a]	CLEAR OBJECTIVES	.44	12.4**	5&84	.65	.46**	59
	Direction	.31					
	CLARITY	.17					
	EXTERNAL INFLUENCES	.24					
	COMMITMENT TO GROUP	-.21					
Negotiation	CLEAR OBJECTIVES	.43	27.1**	2&87	.62	.32**	77
	Negotiation	-.36					
Consultation	Consultation	.40	29.5**	2&87	.64	.43**	77
	CLEAR OBJECTIVES	.37					
Participation	CLEAR OBJECTIVES	.44	19.0**	2&87	.55	.31**	71
	CLARITY	.22					
Delegation	CLEAR OBJECTIVES	.43	12.8**	4&85	.61	.39**	75
	Delegation	.22					
	HARMONY	.27					
	COMMITMENT TO GROUP	-.21					

a Capitalized variables represent manager perceptions; lower case variables represent subordinate perceptions

b Cross-validation R

c Number of work groups in cross-validation sample.

* $p<.05$

** $p<.01$